

REMARKS

This Amendment is fully responsive to the non-final Office Action dated November 21, 2008, issued in connection with the above-identified application. A petition for a one-month extension of time accompanies this Amendment. Claims 1-32 were previously pending in the present application. With this Amendment, claims 2, 10, 18 and 26 have been canceled without prejudice or disclaimer to the subject matter therein; and claims 1, 3-5, 8, 9, 11-13, 16, 17, 19-21, 24 and 25 have been amended. Accordingly, claims 1, 3-9, 11-17, 19-25 and 27-32 are now pending in the present application. No new matter has been introduced by the amendments made to the claims. Favorable reconsideration is respectfully requested.

To facilitate the Examiner's reconsideration of the present application, the Applicants have provided amendments to the specification and abstract. The changes to the specification and abstract include minor editorial and clarifying changes. No new matter has been introduced by the changes made to the specification and abstract.

In Office Action, claims 1, 5, 13, 17, 21, 25 and 29 have been objected to based on minor informalities. Specifically, claims 1, 17 and 25 are objected to because each claim recites the limitation "the collected image," which lack proper antecedent basis. The Applicants have amended claims 1, 17 and 25 to correct the lack of antecedent basis noted by the Examiner.

Claims 5, 13, 21 and 29 are objected to because each claim recites the limitation "a two dimensional light distribution," which lacks a proper explanation in the specification. However, the Applicants respectfully point out that an explanation of both the one dimensional light distribution and the two dimensional light distribution can be found at least on pg. 14, lines 5-11 of specification of the present application. Accordingly, the Applicants' assert that one of ordinary skill in the art would understand what is meant by "two dimensional light distribution," as recited in the claims. Withdrawal of the objection to claims 1, 5, 13, 17, 21, 25 and 29 is now respectfully requested.

In the Office Action, claims 9-24 have been rejected under 35 U.S.C. 102(b) as being anticipated by Tompkin et al. (article entitled "Machine-verifiable diffractive features for document security," hereafter "Tompkin"). Claims 10 and 18 have been canceled thereby

rendering the above rejection to those claims moot. Additionally, the Applicants have amended independent claims 9 and 17 to help further distinguish the present invention from the cited prior art. For example, claim 9 (as amended) recites the following features:

“[a] light emitting device comprising:

a display means for displaying an image in which authentication information is incorporated; and

an optical system means for diffracting light of the displayed image at a predetermined angle for each pixel, and

wherein said display means and said optical system means are arranged so that in an image which is displayed by said display means, the image corresponding to the authentication information is diffracted and the image other than authentication information is emitted in a direction substantially perpendicular to a display screen of said display means.”

The features noted above in independent claim 9 are similarly recited in independent claims 17 (as amended). Additionally, the features noted above are fully supported by the Applicants’ disclosure.

The present invention (as similarly recited in independent claims 9 and 17) is distinguishable over the cited prior art in that a display means and a first optical system means are arranged so that the image corresponding to the authentication information is diffracted and the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of the display means. No such features are believed to be disclosed or suggested by the cited prior art.

In the Office Action, the Examiner relies on Tompkin for disclosing or suggesting all the features recited in independent claims 9 and 17. However, the Applicants assert that Tompkin fails to disclose or suggest all the features recited in independent claims 9 and 17 (as amended).

In the Office Action, the Examiner alleges that Tompkin discloses that an optical variable device (OVD) is rotated or turned by any angle such that if the angle of rotation is 90 degrees, then images will be displayed perpendicularly on the screen (see Tompkins, pg. 204, lines 18-19).

However, the Applicants respectfully disagree with the Examiner's interpretation of the reference. Tompkin refers to a rotation of 180 degrees, but is silent with regard to a rotation of 90 degrees. Moreover, even if a person of ordinary skill in the art were able to achieve a rotation of 90 degrees (based on Tompkin), the fact that "both images will display perpendicularly to the screen" has no relation to the claimed invention (as recited in independent claims 9 and 17).

For example, in the present invention "the image corresponding to the authentication information is emitted in a direction substantially perpendicular to a display screen of the display means." This feature of the present invention cannot be achieved if both of the lights of images corresponding to the authentication and image other than the authentication are emitted perpendicularly, as noted by the Examiner.

In addition, Tompkin merely teaches that an image turns up and down by a rotation of 180 degrees. Again, such a rotation of images has no relation to the present invention (as recited in independent claims 9 and 17).

Based on the above discussion, independent claims 9 and 17 (as amended) are not anticipated or rendered obvious by Tompkin. Likewise, claims 11-16 and 19-24 are not anticipated or rendered obvious by Tompkin at least by virtue of their respective dependencies from independent claims 9 and 17.

In the Office Action, claims 1-8 and 25-32 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tompkin in view of Yamakawa et al. (U.S. Patent No. 4,792,685, hereafter "Yamakawa"). Claims 2 and 26 have been canceled thereby rendering the above rejection to those claims moot. Additionally, the Applicants have amended independent claims 1 and 25 to help further distinguish the present invention from the cited prior art. In particular, independent claims 1 and 25 have been amended similar to independent claims 9 and 17. For example, claim 1, as amended, recites the following features:

"[a]n authentication system comprising:

a light emitting device including

a display means for displaying an image in which authentication information is

incorporated, and

a first optical system means for diffracting light of the displayed image at a predetermined angle for each pixel; and

wherein said display means and said first optical system means are arranged so that in an image which is displayed by said display means, the image corresponding to the authentication information is diffracted and the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of said display means;

an authentication device including

a second optical system means for collecting the light of the image diffracted by said light emitting device,

a photoelectric converting means which carries out photoelectric conversion of a collected image, and

a control means which carries out authentication using the converted image.” (Emphasis added).

The features noted above in independent claim 1 are similarly recited in independent claim 25 (as amended). Additionally, the features noted above are fully supported by the Applicants’ disclosure.

The present invention (as similarly recited in independent claims 1 and 25) is distinguishable over the cited prior art in that a display means and a first optical system means are arranged so that the image corresponding to the authentication information is diffracted and the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of the display means.

In the Office Action, the Examiner relies on Tompkin in view of Yamakawa for disclosing or suggesting all the features recited in independent claims 1 and 25. Although the Examiner relies on the above combination in maintaining the rejection, the Examiner relies primarily on Tompkin for disclosing or suggesting the above feature of the present invention.

However, as noted above, independent claims 1 and 25 have been amended similar to independent claims 9 and 17. That is, in the present invention “the image corresponding to


the authentication information is emitted in a direction substantially perpendicular to a display screen of the display means.” This feature of the present invention cannot be achieved if both of the lights of images corresponding to the authentication and image other than the authentication are emitted perpendicularly, as disclosed in Tompkin. Accordingly, independent claims 1 and 25 (as amended) are distinguishable over Tompkin for similar reasons noted above for independent claims 9 and 17 (as amended).

Moreover, Yamakawa fails to overcome the deficiencies noted above in Tompkin. Accordingly, no combination of Tompkin and Yamakawa would result in, or otherwise render obvious, independent claims 1 and 25. Likewise, no combination of Tompkin and Yamakawa would result in, or otherwise render obvious, 3-8 and 27-32 at least by virtue of their respective dependencies from independent claims 1 and 25.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the outstanding Office Action, and pass the present application to issue. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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March 23, 2009